TITLE OF INVENTION

Toilet Cleaning Brush With Integral Toilet Plunger

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CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISK APPENDIX

Not Applicable

BACKGROUND OF THE INVENTION

01 The invention is the transformation of an ordinary cylindrical-head toilet cleaning brush into a toilet plunger while maintaining the original functioning of the toilet brush. The key additional component is a flexible (rubber/plastic) diaphragm which is installed (or molded during manufacture) within the bristle-area of the toilet brush.

02 The problem of where in the bathroom to hide the old toilet plunger is solved as it's replacement now hides within the once ordinary toilet brush, which is (still) stored in the ordinary toilet brush holder. The toilet brush holder is usually a plastic, open-top, decorative cup, which holds the toilet brush in the vertical position, (wet) brush-end down, (dry) handle-end up.

03 The now-mandated (for all new sales) low-flow toilets are notorious for plugging. In any toilet, the plugging usually occurs in the trap-way. The invention acts as a piston within the first few inches of the trap-way. During use as a plunger, the brush bristles help center the diaphragm in the trap-way, providing a wide acceptable angle of application. The amount of force used to apply the invention as a plunger is much less than the force used to apply an old-style plunger, resulting in less effort, less noise, and less splashing.

04 To apply the invention in a plunging mode: grasp the handle of the toilet brush with one hand. Place the opposite end within the toilet bowl at the opening of the trap-way. If the bowl has too little water, release some from the tank. If the bowl is too full of water, let it recede a little. Lower the toilet brush handle toward the front edge of the toilet bowl and apply a few, quick, short, in-and-out stokes. The in-and-out motion will de-aggregate the plug, which is preferable to merely pushing the mass, as-is, deeper into the trap-way, the way some prior art may. The axis of stroking does not have to match the axis of the trap-way; A differential of 50 degrees is common and highly effective. The bristles will center the diaphragm in the trap-way, allowing it to seal against the inner wall. Typically, the whole procedure takes a few seconds.

BRIEF SUMMARY OF THE INVENTION

The invention is the combination of an ordinary toilet cleaning brush with the functioning of a toilet plunger. The invention replaces the (old) toilet cleaning brush and the (old) toilet plunger with one elegant tool.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

FIGURE 1. Full side view of the invention. The flexible diaphragm is visible as a thick solid line in the lower third of the bristles, perpendicular to the handle shaft.

DETAILED DESCRIPTION OF THE INVENTION

01 The invention consists of the transformation of an ordinary toilet cleaning brush into a toilet plunger while maintaining the original functioning of the toilet brush. The key additional component is a flexible diaphragm which is installed within the bristle-area of the toilet brush.

02 To manufacture the invention: Start with an ordinary toilet cleaning brush consisting of a half inch (+ or -) diameter round shaft about thirteen inches (+ or -) long, with the top end rounded to eliminate the hard edge and the bottom three inches (+ or -) covered with bristles creating a three inch (+ or -) diameter brush with a hemispherical bottom. Cost: $4, (USD, in 2003), including the brush holder/stand which stores the brush in a vertical position on the floor, typically next to the toilet.

03 Make the flexible diaphragm by buying some (typically grey) 40 mil PVC shower pan liner sheet at your local home center or plumbing supply. It is sold by the foot on a 48 inch wide roll. One foot, $4 (USD, in 2003), is enough to manufacture over 60 diaphragm units. Other materials, rubber sheet, etc. also work. Compatibility with cleaning solutions is important. Cut a three inch diameter "round" of the PVC sheet and cut a round hole in the center of the PVC "round" which matches the diameter of the toilet brush shaft within the bristle-area.

04 Finally, join the diaphragm to the toilet brush by forcing the bottom of the brush through the center hole of the PVC "round". You may have to enlarge the center hole slightly and pull and/or hook the bristles through the center hole with a pointed object. Position the diaphragm about one and one quarter inches from the bottom of the brush. The toilet brush holder/stand which came with the brush will (still) work.

05 To produce the invention in commercial quantities, the diaphragm should be molded with the handle or installed at the optimum moment in fabrication.

06 To use the invention as a toilet plunger: grasp the handle of the toilet brush with one hand. Place the opposite end within the toilet bowl at the opening of the trap-way. If the bowl has too little water, release some from the tank. If the bowl is too full of water, let it recede a little. Lower the toilet brush handle toward the front edge of the toilet bowl and apply a few, quick, short, in-and-out stokes. The in-and-out motion will de-aggregate the plug, which is preferable to merely pushing the mass, as-is, deeper into the trap-way, the way some prior art may. The axis of stroking does not have to match the axis of the trap-way; A differential of 50 degrees is common and highly effective. The bristles will center the diaphragm in the trap-way, allowing it to seal against the inner wall.

07 To use the invention as a toilet brush: proceed as usual, the diaphragm will not be noticed.

08 The invention is different from prior art in that the problem is attacked from a totally new perspective. Gone is the thick rubber bell on a stick. Gone is the plastic bellows. Gone is the garden hose and the compressed air hose. Gone is the need to seal against the wall of the toilet bowl or the rim of the toilet bowl. Gone is the extra implement to store and hide in the bathroom. Gone is the home with three toilets and one plunger.

09 Sponge(s) and/or pad(s) could be used instead of bristles to build a toilet cleaner with integral plunger, but this would be a next-best solution. Sponges and pads are great for cleaning but they suffer from one major disadvantage: poor draining. Brushes, especially course-bristle brushes drain nearly instantly, which means no mechanical de-watering device needs to be used before the implement is placed in it's stand.